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شبكة المعلومات الجامعية

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التوثيق الالكتروني والميكروفيلم

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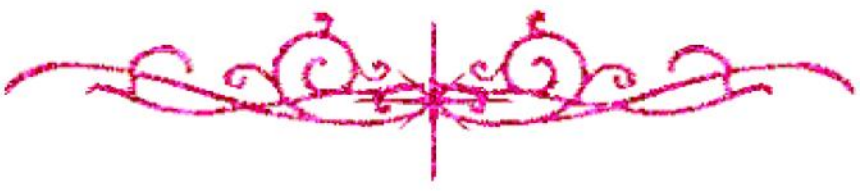

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بالرسالة صفحات لم ترد بالأصل

CLINICAL AND BACTERIOLOGICAL TRIAL ON THE EFFECT OF SIMMONDSIA CHINENSIS (JOJOBA) OIL IN THE MANAGEMENT OF RADIATION INDUCED MUCOSITIS IN HEAD AND NECK CANCER PATIENTS

THESIS

SUBMITTED IN PARTIAL FULFILLMENT FOR THE REQUIREMENT OF THE MASTER DEGREE

IN

ORAL MEDICINE AND PERIODONTOLOGY

BY

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2001

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To a great and special father and mother,

To a cooperative husband,

To wonderful kids,

To my beloved family.

This work is dedicated

Acknowledgment

First and foremost, I feel indebted to **God**, the most kind and the most merciful.

It is a great honour to express my sincere and cordial thanks to **Prof. Dr. Reda Abd El Rahman**, Professor of Oral Medicine and Periodontology, Faculty of Oral and Dental Medicine, Cairo University for his great concern, ceaseless enthusiasm and extreme patience throughout my work and to whom I will always be indebted.

Words do fail me to express my special heartful thanks and appreciation to **Prof. Dr. Mervat El Naggar**, Professor of Radiotherapy, National Cancer Institute, Cairo University, for her constant guidance, valuable help and generous support all the time .

I am really indebted to **Dr. Affaf El Banna**, Assistant Professor of Clinical Pathology, Faculty of Medicine, Cairo University, for her great support, precise comments and precious advices to make this work as best as possible.

I am sincerely grateful to **Prof. Dr. Amani El Khooly**, Professor of Clinical Pathology, Faculty of Medicine, Cairo University, for her generous cooperation fruitful ideas and expert technical supervision. Words are not enough to express my feelings towards her exhaustive help throughout this work.

Special heartful thanks and appreciation are due to **Prof. Dr. Moushira Salah El Din**, Professor of Radiology, Faculty of Oral and Dental Medicine, Cairo University, for introducing me to this area of research, providing the necessary facilities required to prepare this work and to her overwhelming kindness.

I would like to express my deepest gratitude and sincere appreciation to **Dr. Mahmoud Kandil** Assistant Professor of Oral Medicine and Periodontology, Faculty of Oral and Dental Medicine, Cairo University for providing the necessary facilities required to express this work and for his generous cooperation and expert supervision.

I am greatly thankful to **Prof. Dr. Amal Sami Ibrahim**, Professor of Medical Statistics, National Cancer Institute, Cairo University, for his valuable instructions and close supervision of the statistical analysis of this work.

Finally, I would like to thank all patients who cooperated in my study and from whom I learned a great deal, hoping that this work might be of help in relieving some of their agony.

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INTRODUCTION

Introduction

The term head and neck cancer refers to a group of malignancies arising from the various structures located in the upper aerodigestive tract. Included in this group are malignancies of the oral Cavity, the pharynx (including nasopharynx, oropharynx, and hypopharynx), the larynx, the paranasal sinuses and the salivary glands **(Everett, 1997).**

Cancer of the head and neck is not an uncommon type of cancer. In a series reported by the National Cancer Institute in Cairo, it represented 11.6% of all cancers registered during 1970-1985 (Sherif and Ibrahim, 1987). Recent statistics indicate an incidence of 15/100,000 population in the developing world **(Parkin et al., 1997).**

The predominant lesion within these anatomically defined regions is squamous cell carcinoma which could be well, moderately or poorly differentiated **(Stimson et al., 1997)..**

The choice of treatment plan whether it is surgery, radiotherapy, chemotherapy or a combination is stage dependent. Today standard staging is described by the American joint Committee on Cancer staging (AJCC). This system is based on the tumor-nodes-metastasis (TNM classification) **(Piccirillo, 1995).**

Radiotherapy plays an important role in treatment of head and neck cancer. In early stages, both surgery and radiotherapy are equally effective. With advance of disease, surgery needs to be combined with radiotherapy and/or chemotherapy. Treatment modalities must be individualized with a strategy to maximize loco-regional control and optimize functional outcome and quality of life **(Arvins et al., 1997).**

The usage of external beam treatment, three-dimensional conformal radiation therapy and brachytherapy allows the physician to lower the dose

to the surrounding normal tissue while potentially escalating the dose to the tumor. **(Leibel et al., 1991 ; Withers et al., 1993 ; Semba et al., 1994).**

Nevertheless, radiotherapy still shows early and late side effects including mucositis, dry mouth, alteration in taste sensation, altered oral flora counts, dental caries, trismus and the most serious pathological process occurring in bone after radiotherapy which is osteoradionecrosis. The extent and severity of these side effects are dependent on the type of radiation used, the fields of irradiation and the dosage. **(Mealey et al., 1994).**

Irradiation-induced mucositis of the oral cavity is an inflammatory reaction of the mucosa occurring in patients treated by radiotherapy for carcinoma of the head and neck. Mucositis is the result of hypolasia of squamous epithelium due to sterilization of mucosal stem cells and inhibition of proliferation of transit cells.With continuation of radiotherapy, cell regeneration cannot keep pace with cell killing resulting in the development of denudation. **(Maciejewski et al., 1991, and Mose et al., 1997).**

Four clinical signs of mucositis, namely discoloration erythema, pesudomembranes and ulcerations run parallel with the radiobiologic changes in the oral mucous membranes **(Spijkervet et al., 1990).**

Changes in the oral flora have serious implications on mucositis. Radiotherapy leads to change in function of salivary glands with reduction of salivary flow. This in turn shifts the oral flora to a highly acidogenic flora (including gram negative bacilli). These microorganisms continuously release endotoxins and potent inflammation mediators, thus playing a role in promoting or maintaining mucositis. **(Walker, 1979 ; Saene et al., 1989 and Martin, 1993).**

Although mucositis is only a transient side effect following irradiation, it still causes discomfort, and pain and interferes with adequate oral nutrition. It can be a potential source of infection. Severe mucositis may lead to interruption of planned course of radiotherapy which in turn will affect the radio-curability of head and neck cancers. **(Epstein et al., 1989 ; Bataini et al., 1989 and Fowler, and Lindstrom, 1992).**

Radiation oncologists have attempted to minimize mucositis by using various radiotherapy techniques but have been only minimally successful. The accepted standard of care for mucositis includes the use of lubricants, antimicrobials, systemic analgesics, anti-inflammatory drugs, topical anaesthetics, and coating agents. Among those multimodal therapeutic strategies in mucositis, none of them is defined as an effective standard **(Gerry et al., 1991).**

Simmondsia chinensis (Jojoba) is a plant that grows in semi desertic areas in northern Mexico. It is cultivated experimentally and on a small scale in several African areas, including Egypt. Conversely to classical vegetable oils, Jojoba oil hardly contains any triglycerides and is composed almost entirely of liquid wax esters **(Spencer and List, 1994).**

Jojoba oil proved to have a potential antimicrobial and anti-inflammatory action **(Zainal et al., 1994 and Sobhy et al.,1996).** It has a coating ability due to its high viscosity **(Coffin, 1987).** Because of its moisturizing and smoothening properties it is used in cosmetics. (Hirai et al, 1994). Jojoba was shown to give good results in reducing pain and promoting healing of recurrent aphthous ulceration **(Amein et al., 1997).**

Because of these beneficial effects, it seemed pertinent to test and evaluate the role of jojoba oil in management of radiation induced mucositis in head and neck cancer patients.